

IN THE CLAIMS

1.-73. Canceled

74. (Original) An integrated circuit device having a film obtainable by chemical vapor deposition of an organometallic compound of the formula $(R^1)_mM(PR^2_3)_x$, where M is a metal selected from the group consisting of manganese, technetium, rhenium, iron, ruthenium, osmium, cobalt, rhodium, iridium, nickel, palladium, and platinum wherein (a) when M is manganese, technetium or rhenium, m is 1, x is 5 and m+x is 6; (b) when M is iron, ruthenium or osmium, m is 0, 1, 2, 3 or 4; x is 2, 3, 4 or 5 and m + x is 4, 5, 6 or 7; (c) when M is cobalt, rhodium or iridium, m is 1, 2, 3 or 4 and x is 2, 3 or 4 and m + x is 4, 5, 6, 7 or 8; and (d) when M is nickel, palladium or platinum, m is 0 or 2, x is 2, 3, or 4 and m + x is 2, 3, 4, 5 or 6; each R^1 is independently selected from the group consisting of hydrogen, deuterium, N_2 , H_2 , D_2 and a group of the formula $-CR^3_2-CR^3_2-R^4$; each R^2 is independently selected from the group consisting of lower alkyl, aryl, arylalkyl, alkoxy, aryloxy, arylalkoxy, alkylsilyl, arylsilyl, arylalkylsilyl, alkoxysilyl, aryloxysilyl, arylalkoxysilyl, alkylsiloxo, arylsiloxo, arylalkylsiloxo, alkoxysiloxo, aryloxysiloxo, arylalkoxysiloxo, alkylsilylalkyl, arylsilylalkyl, arylalkylsilylalkyl, alkoxysilylalkyl, aryloxysilylalkyl, arylalkoxysilylalkyl, alkylsiloxoalkyl, arylsiloxoalkyl, arylalkylsiloxoalkyl, alkoxysiloxoalkyl, aryloxysiloxoalkyl, arylalkoxysiloxoalkyl, alkylsilylalkoxy, arylsilylalkoxy, arylalkylsilylalkoxy, alkoxysilylalkoxy, aryloxysilylalkoxy, arylalkylsilylalkoxy, alkoxysilylalkoxy, aryloxysilylalkoxy, arylalkoxysilylalkoxy, alkylsiloxoalkoxy, arylsiloxoalkoxy, arylalkylsiloxoalkoxy, alkoxysiloxoalkoxy, aryloxysiloxoalkoxy, and arylalkoxysiloxoalkoxy; each R^3 is independently selected from the group consisting of hydrogen, deuterium, C_1 - C_6 alkyl, C_1 - C_6 cycloalkyl, phenyl, benzyl, $(C_1$ - C_2 alkyl or alkoxy) $_3$ -silyl, and $(C_1$ - C_2 alkyl or alkoxy) $_3$ -siloxo and wherein at least two groups R^3 are selected from the group consisting of hydrogen and deuterium; R^4 is hydrogen or deuterium; and wherein when M is cobalt and one group R^1 is selected to be N_2 , then m is 2 and the second group R^1 is hydrogen or deuterium.

75. (Original) The integrated circuit device of claim 74 wherein M is cobalt.

76. (Original) A method for forming a powder containing a metal or metal derivative comprising:

providing a medium; and

dispersing a vapor or liquid into the medium, the vapor or liquid containing an organometallic compound of the formula $(R^1)_mM(PR^2_3)_x$, where M is a metal selected from a Group VIIIb, VIII, IX or X metal wherein (a) when M is manganese, technetium or rhenium, m is 1, x is 5 and m+x is 6; (b) when M is iron, ruthenium or osmium, m is 0, 1, 2, 3 or 4; x is 2, 3, 4 or 5 and m + x is 4, 5, 6 or 7; (c) when M is cobalt, rhodium or iridium, m is 1, 2, 3 or 4 and x is 2, 3 or 4 and m + x is 4, 5, 6, 7 or 8; and (d) when M is nickel, palladium or platinum, m is 0 or 2, x is 2, 3 or 4 and m + x is 2, 3, 4, 5 or 6; each R^1 is independently selected from the group consisting of hydrogen, deuterium, N_2 , H_2 , D_2 and a group of the formula $-CR^3_2-CR^3_2-R^4$; each R^2 is independently selected from the group consisting of lower alkyl, aryl, arylalkyl, alkoxy, aryloxy, arylalkoxy, alkylsilyl, arylsilyl, arylalkylsilyl, alkoxysilyl, aryloxysilyl, arylalkoxysilyl, alkylsiloxo, arylsiloxo, arylalkylsiloxo, alkoxysiloxo, aryloxysiloxo, arylalkoxysiloxo, alkylsilylalkyl, arylsilylalkyl, arylalkylsilylalkyl, alkoxysilylalkyl, aryloxysilylalkyl, arylalkoxysilylalkyl, alkylsiloxoalkyl, arylsiloxoalkyl, arylalkylsiloxoalkyl, alkoxysiloxoalkyl, aryloxysiloxoalkyl, arylalkoxysiloxoalkyl, alkylsilylalkoxy, arylsilylalkoxy, arylalkylsilylalkoxy, alkoxysilylalkoxy, aryloxysilylalkoxy, arylalkylloxysilylalkoxy, alkylsiloxoalkoxy, arylsiloxoalkoxy, arylalkylsiloxoalkoxy, alkoxysiloxoalkoxy, aryloxysiloxoalkoxy, and arylalkoxysiloxoalkoxy; each R^3 is independently selected from the group consisting of hydrogen, deuterium, C_1 - C_6 alkyl, C_1 - C_6 cycloalkyl, phenyl, benzyl, $(C_1$ - C_2 alkyl or alkoxy) $_3$ -silyl, and $(C_1$ - C_2 alkyl or alkoxy) $_3$ -siloxo and wherein at least two groups R^3 are selected from the group consisting of hydrogen and deuterium, R^4 is hydrogen or deuterium; and wherein when M is cobalt and one group R^1 is selected to be N_2 , then m is 2 and the second group R^1 is hydrogen or deuterium.

77. (Original) The method of claim 76 wherein the medium is at a temperature at or above the thermal decomposition temperature of the organometallic precursor compound.

78. (New) The integrated circuit device of claim 74 wherein M is manganese.

79. (New) The integrated circuit device of claim 74 wherein M is technetium.
80. (New) The integrated circuit device of claim 74 wherein M is rhenium.
81. (New) The integrated circuit device of claim 74 wherein M is iron.
82. (New) The integrated circuit device of claim 74 wherein M is ruthenium.
83. (New) The integrated circuit device of claim 74 wherein M is osmium.
84. (New) The integrated circuit device of claim 74 wherein M is rhodium.
85. (New) The integrated circuit device of claim 74 wherein M is iridium.
86. (New) The integrated circuit device of claim 74 wherein M is nickel.
87. (New) The integrated circuit device of claim 74 wherein M is palladium.
88. (New) The integrated circuit device of claim 74 wherein M is platinum.